



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,781	12/28/2001	Siavash Fallahi	1875.1270001/JTH/BAM	6416
28393 7590 04/06/2007 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVE., N.W. WASHINGTON, DC 20005			EXAMINER BRINEY III, WALTER F	
			ART UNIT	PAPER NUMBER
			2615	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/06/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/028,781	Applicant(s) FALLAHI ET AL.	
	Examiner Walter F. Briney III	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-33 is/are allowed.
- 6) ☒ Claim(s) 1-14 and 34-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. **Claims 1-14 and 34-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

Claims 1-14 and 34-36 contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are limited to “a communications device.” Some functions of the claimed “relay” set forth in these claims as amended are not supported by the originally filed specification; in particular, “wherein said relay is open-circuited when power is applied to said relay.” This contrasts with what was presented previously: “wherein said relay is open circuited...when power is applied to the communications device.” While the relay makes up a part of the communications device, it does not follow that the communications device receiving power necessitates that the relay receives power.

Moreover, it is not the application of power to the relay that causes it to cease conducting (become open circuited); rather it is both the application of power to the physical layer of the communications device—which biases transistors 231, 232 and 262-264 to ensure a grounded bias voltage at the gates of transistors 235 and 236—and the holding of the source and drain potential about transistors 235 and 236 higher

Art Unit: 2615

than the grounded bias voltage applied thereto; this ensures that the gate to source voltage is negative, which is below the threshold voltage of zero Volts required to form a depletion channel in a native NMOS device. See applicant's specification: figures 2B and 2C and paragraphs [0052], [0053] and [0055].

Any argument that applying an equal voltage to the source and drain of transistors 235 and 236 corresponds to applying power is clearly flawed. At once, it is noted that power is equivalent to both the voltage across an element and the current through it. As no voltage difference exists, and since the device is open no current flows, power is not being supplied. Power is not applied between the gate and source/drain either since current does not flow between those terminals. Therefore, claims 1 and 34 and their dependents 2-14, 35 and 36 contain new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 11, 12, 14 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormack et al. (US Patent 6,535,983) in view of Campardo et al. (US Patent 5,886,925).

Claim 1 is limited to "a communications device." As shown apropos the Non-Final Rejection filed 13 July 2006, McCormack in view of Campardo teaches "a

Art Unit: 2615

substrate," "a relay" and "a switchable termination resistor." The instant amendment modifies the manner in which the relay operates. To wit, "said relay is closed when no power is applied to said relay and...said relay is open-circuited when power is applied to said relay." The lack of support for the latter limitation notwithstanding, McCormack in view of Campardo teaches such a relay. Indeed, diode 72 corresponds to the claimed relay. When no power is applied—that is, when a zero voltage bias is applied—diode 72 implemented as a native device will have an active channel to conduct; it will be "closed." When power is applied to it, for example, during an operation phase, as seen in figure 5B, the diode 72 will be reverse-biased and cutoff; it will be "open-circuited." Therefore, McCormack in view of Campardo makes obvious all limitations of the claim.

Claims 2 and 3 are rejected for the same reasons presented above apropos the rejection of claim 1 as well as those reasons set forth in the Final Rejection filed 04 January 2006.

Claims 11, 12 and 14 are rejected for the same reasons presented above apropos the rejection of claim 1 as well as those reasons set forth in the Final Rejection filed 04 January 2006.

Claims 34-36 are rejected for the same reasons presented above apropos the rejection of claim 1 as well as those reasons set forth in the Final Rejection filed 04 January 2006.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

3. **Claims 15-33 are allowed.**

Claim 27 is limited to "a communications device." The applicant's current amendments to claim 27 are not disclosed by the prior art. In particular, the impedance of switched termination 60 is not constant with respect to either time or frequency. That is, the impedance changes with a time-varying input voltage, and varies based on the frequency of the input voltage. Both the former and the later impedance changes are affected by the presence of capacitor 70 in the control loop. Thus, claim 27 is allowable over the cited prior art.

Claims 28-33 are limited in part to "the communications device of claim 27," and thus, are allowable over the cited prior art for at least the same reasons.

Claims 15-26 are allowable over the cited prior art for the reasons set forth in the Final Rejection filed 04 January 2006.

Response to Arguments

Applicant's arguments filed 12 January 2007 have been fully considered but they are not persuasive.

On page 12, lines 13-18, of the instant response, the applicant contends that embodying the diodes 72 and 74 of McCormack with native NMOS devices configured as diodes as taught by Campardo "would eliminate the unidirectional current flow characteristics of the diodes 72 and 74, rendering the system shown in figure 2 of McCormack insufficient for its intended purpose;" the examiner respectfully disagrees. Analyzing figure 4 with a short-circuit between upper and lower nodes 14 is the only

Art Unit: 2615

manner which results in the loss of unidirectional operation. In essence, shorting these nodes would allow back communication between diodes 72 and 74. However, in operation, the system of McCormack is never short-circuited, but either receives power in the direction shown in figure 5A or the direction shown in figure 5B. In figure 5A, diode 72 will naturally conduct current in the direction indicated. This is because diode 72 embodied in the manner shown in figure 5 of Campardo has a current conducting terminal and a gate connected to the upper node 14. When positive voltage is applied, the conducting terminal and gate have the same voltage. Call the conducting terminal a drain. The second current conducting terminal is at a lower voltage, which is implied by the direction of current flow in figure 5A. Because the gate and this second terminal are isolated, the gate has a higher voltage relative to the second terminal. Call this second terminal a source. Now, a positive drain-to-source voltage exists, which causes current to flow. On the other hand, diode 74 implemented similarly, but with a first current conducting terminal and gate connected to lower node 14, will not conduct current. Current cannot be conducted if one considers the source of diode 74 to be connected directly to power load 33 since it results in the gate voltage being lower than the source voltage. As such, non-unidirectional current flow is precluded. Current can only flow in the direction indicated in figure 5A.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter F. Briney III whose telephone number is 571-272-7513. The examiner can normally be reached on M-F 8am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

wfb
3/29/07



SINH TRAN
SUPERVISORY PATENT EXAMINER